

SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT: HÖTTEN, Gertrud  
NEIDHARDT, Helge  
BECHTOLD, Rolf  
POHL, Jens

(ii) TITLE OF INVENTION: DNA SEQUENCES ENCODING NOVEL  
GROWTH/DIFFERENTIATION FACTORS

(iii) NUMBER OF SEQUENCES: 6

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: NIKAIDO, MARMELSTEIN, MURRAY & ORAM  
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Suite 330  
(C) CITY: Washington  
(D) STATE: DC  
(E) COUNTRY: USA  
(F) ZIP: 20005

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk  
(B) COMPUTER: IBM PC compatible  
(C) OPERATING SYSTEM: PC-DOS/MS-DOS  
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: UNKNOWN  
(B) FILING DATE: 12-JUL-1996  
(C) CLASSIFICATION:

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: KLESNER, Sharon N  
(B) REGISTRATION NUMBER: 16,335  
(C) REFERENCE/DOCKET NUMBER: P564-5010

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: 202/638-5000  
(B) TELEFAX: 202/638-4810

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 2272 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(x) PUBLICATION INFORMATION:  
(H) DOCUMENT NUMBER: US 08/289,222  
(I) FILING DATE: 12-AUG-1994

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

CAAGGAGCCA TGCCAGCTGG ACACACACTT CTTCCAGGGC CTCTGGCAGC CAGGACAGAG	60
TTGAGACCAC AGCTGTTGAG ACCCTGAGCC CTGAGTCTGT ATTGCTCAAG AAGGGCCTTC	120
CCCAGCAATG ACCTCCTCAT TGCTTCTGGC CTTTCTCCTC CTGGCTCCAA CCACAGTGGC	180
CACTCCCAGA GCTGGCGGTC AGTGTCCAGC ATGTGGGGGG CCCACCTTGG AACTGGAGAG	240
CCAGCGGGAG CTGCTTCTTG ATCTGGCCAA GAGAAGCATC TTGGACAAGC TGCACCTCAC	300
CCAGCGCCCA ACACTGAACC GCCCTGTGTC CAGAGCTGCT TTGAGGACTG CACTGCAGCA	360
CTCCACGGG GTCCACAGG GGGCACTTCT AGAGGACAAC AGGGAACAGG AATGTGAAAT	420
EATCAGCTTT GCTGAGACAG GCCTCTCCAC CATCAACCAG ACTCGTCTTG ATTTTCACTT	480
CTCCTCTGAT AGAACTGCTG GTGACAGGGA GGTCCAGCAG GCCAGTCTCA TGTTCTTTGT	540
GCAGCTCCCT TCCAATACCA CTTCGACCTT GAAAGTGAGA GTCCTTGTGC TGGGTCCACA	600
TAATACCAAC CTCACCTTGG CTA CTCAGTA CCTGCTGGAG GTGGATGCCA GTGGCTGGCA	660
TCAACTCCCC CTAGGGCCTG AAGCTCAAGC TCCCTGCAGC CAGGGGCACC TGACCCTGGA	720
GCTGGTACTT GAAGGCCAGG TAGCCCAGAG CTCAGTCATC CTGGGTGGAG CTGCCCATAG	780
GCCTTTTGTG GCAGCCCGGG TGAGAGTTGG GGGCAACAC CAGATTCACC GACGAGGCAT	840
CGACTGCCAA GGAGGCTCCA GGATGTGCTG TCGACAAGAG TTTT'TTGTGG ACTTCCGTGA	900
GATTGGCTGG CACGACTGGA TCATCCAGCC TGAGGGCTAC GCCATGAACT TCTGCATAGG	960
GCAGTGCCCA CTACACATAG CAGGCATGCC TGGTATTGCT GCCTCCTTTC AACTGCAGT	1020
GCTCAATCTT CTCAAGGCCA ACACAGCTGC AGGCACCACT GGAGGGGGCT CATGCTGTGT	1080
ACCCACGGCC CGGCGCCCCC TGTCTCTGCT CTATTATGAC AGGGACAGCA ACATTGTCAA	1140
GACTGACATA CCTGACATGG TAGTAGAGGC CTGTGGGTGC AGTTAGTCTA TGTGTGGTAT	1200
GGGCAGCCCA AGGTTGCATG GGAAAACACG CCCCTACAGA AGTGCACCTC CTTGAGAGGA	1260
GGGAATGACC TCATTCTCTG TCCAGAATGT GGACTCCCTC TTCCTGAGCA TCTTATGGAA	1320
ATTACCCAC CTTTGACTTG AAGAAACCTT CATCTAAAGC AAGTCACTGT GCCATCTTCC	1380

TGACCACTAC CCTCTTTCCT AGGGCATAGT CCATCCCGCT AGTCCATCCC GCTAGCCCCA 1440  
 CTCCAGGGAC TCAGACCCAT CTCCAACCAT GAGCAATGCC ATCTGGTTCC CAGGCAAAGA 1500  
 CACCCTTAGC TCACCTTTAA TAGACCCCAT AACCCACTAT GCCTTCCTGT CCTTTCTACT 1560  
 CAATGGTCCC CACTCCAAGA TGAGTTGACA CAACCCCTTC CCCCAATTTT TGTGGATCTC 1620  
 CAGAGAGGCC CTTCTTTGGA TTCACCAAAG TTTAGATCAC TGCTGCCCAA AATAGAGGCT 1680  
 TACCTACCCC CCTCTTTGTT GTGAGCCCCT GTCCTTCTTA GTTGTCCAGG TGA ACTACTA 1740  
 AAGCTCTCTT TGCATACCTT CATCCATTTT TTGTCCCTTCT CTGCCTTTCT CTATGCCCTT 1800  
 AAGGGGTGAC TTGCCTGAGC TCTATCACCT GAGCTCCCCT GCCCTCTGGC TTCCTGCTGA 1860  
 GGTCAAGGCA TTTCTTATCC CTGTTCCCTC TCTGTCTAGG TGTCATGGTT CTGTGTA ACT 1920  
 GTGGCTATTC TGTGTCCCTA CACTACCTGG CTACCCCTT CCATGGCCCC AGCTCTGCCT 1980  
 ACATTCTGAT TTTTTTTTTT TTTTTTTTTT TGAAAAGTTA AAAATTCCTT AATTTTTTAT 2040  
 TCTGGTACC ACTACCACAA TTTACAGGGC AATATACCTG ATGTAATGAA AAGAAAAAGA 2100  
 AAAAGACAAA GCTACAACAG ATAAAAGACC TCAGGAATGT ACATCTAATT GACACTACAT 2160  
 TGCATTAATC AATAGCTGCA CTTTTTGCAA ACTGTGGCTA TGACAGTCCT GAACAAGAAG 2220  
 GGTTCCTGT TTAAGCTGCA GTAACCTTTC TGACTATGGA TCATCGTTCC TT 2272

(2) INFORMATION FOR SEQ ID NO:2:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 352 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: US 08/289,222
- (I) FILING DATE: 12-AUG-1994

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Met Thr Ser Ser Leu Leu Leu Ala Phe Leu Leu Leu Ala Pro Thr Thr  
 1 5 10 15  
 Val Ala Thr Pro Arg Ala Gly Gly Gln Cys Pro Ala Cys Gly Gly Pro  
 20 25 30

bul  
D<sub>1</sub>  
cont

42

305 310 315 320  
 Ala Arg Arg Pro Leu Ser Leu Leu Tyr Tyr Asp Arg Asp Ser Asn Ile  
 325 330 335  
 Val Lys Thr Asp Ile Pro Asp Met Val Val Glu Ala Cys Gly Cys Ser  
 340 345 350

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1558 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: US 08/289,222  
 (I) FILING DATE: 12-AUG-1994

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

AAGGAGTCAT GCCAGTCGGA GGTCAATCAC ATTCCTCCCA GGGTCCCTGG TGCCCAGGAC 60  
 AGAGTTGAAG CACTCCCCTT GAGACCCTGA ATATAGGCTT TGGGTCCTTT AAGGAGGCTA 120  
 TCCTCCAGCA ATGGCCTCCT CCTTGCTCCT GGCTCTCTTG TTCTGACTC CAACCACAGT 180  
 AGTGAACCCC AAAACTGAGG GTCCATGCCC AGCAATGTTGG GGTGCCATCT TTGACCTGGA 240  
 GAGCCAGCGG GAGCTGCTTC TCGATTTGGC CAAGAAAAGT ATCCTGGACA AGCTGCACCT 300  
 CAGCCAGCGC CCCATACTCA GTCGGCCAGT GTCCAGAGGG GCTCTCAAGA CCGCGCTGCA 360  
 GCGCCTCCGC GGGCCTCGAC GGGAAACCCT GTTGGAGCAT GACCAGAGAC AAGAAGAATA 420  
 TGAGATCATC AGCTTTGCTG ACACAGACCT CTCCAGCATC AACCAGACCC GGCTCGAGTT 480  
 CCACTTCTCT GGTAGAATGG CCAGTGGCAT GGAGGTCCGG CAGACCCGCT TCATGTTCTT 540  
 CGTGCAGTTC CCCCACAATG CCACCCAGAC CATGAATATA AGAGTTCTTG TGCTAAGACC 600  
 ATATGACACC AACCTCACCT TGACAAGTCA GTACGTGGTG CAGGTGAATG CCAGTGGCTG 660  
 GTACCAGCTT CTCCTGGGAC CTGAAGCTCA AGCTGCTTGC AGCCAGGGAC ACCTTACTCT 720  
 GGAGCTGGTA CCAGAAAGCC AGGTGGCCCA CAGTTCCTTG ATCCTGGGCT GGTTTTCCCA 780  
 CAGGCCTTTT GTGGCAGCCC AGGTAAGGGT TGAGGGCAAG CATCGGGTTC GCCGGCGAGG 840

TATCGATTGC CAGGGGGGGT CCAGGATGTG CTGTCGACAA GAGTTTTTTG TAGACTTCCG 900  
 TGAGATTGGC TGGGAATGACT GGATCATCCA GCCTGAAGGC TATGCCATGA ACTTCTGCAC 960  
 TGGGCAGTGC CCACTACATG TGGCAGGCAT GCCTGGCATC TCTGCCTCCT TTCACACTGC 1020  
 AGTGCTGAAT CTGCTCAAAG CCAACGCAGC TGCTGGCACC ACTGGCAGGG GCTCGTGCTG 1080  
 CGTGCCTACA TCTCGGCGCC CTCTGTCTTT GCTCTACTAT GACAGGGACA GCAACATTGT 1140  
 CAAGACGGAT ATACCTGACA TGGTGGTCGA GGCCTGCGGG TGTAGTTAGC TTATGGGTGA 1200  
 TACAGGCTGC CTGAGGTAGA ATGGCCTTCC TCAGGAAGGG AACTCTGTT CCCACTTCTG 1260  
 TCCAGAATGG AAACACCTTT CTAAGCATGC AGACATCCCT CTGTGGACTT CAGGGGATCC 1320  
 ACCTCTAAAG AGAGTCACTA GTGACCAACA GCCTTTCTCT CTCCTGGGAC ATGGTTGACC 1380  
 CAGTACACCC ATCCTCAGCC TTAAGTTAGA GGCTAATCGA CTCCTACATA TATATGTCAT 1440  
 TTTGTCCTAG CAAACACCCC TTAGCTCCCC TTAGTCAACT ATGTAATCTA CTCTGCCTCC 1500  
 CTGACCCTGC CACCGGAAGG TTCCTATCC ACGATGATAT GCCTTAGTGT CTCCCCTT 1558

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 352 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: US 08/289,222  
 (I) FILING DATE: 12-AUG-1994

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Met Ala Ser Ser Leu Leu Leu Ala Leu Leu Phe Leu Thr Pro Thr Thr  
 1 5 10 15  
 Val Val Asn Pro Lys Thr Glu Gly Pro Cys Pro Ala Cys Trp Gly Ala  
 20 25 30  
 Ile Phe Asp Leu Glu Ser Gln Arg Glu Leu Leu Leu Asp Leu Ala Lys  
 35 40 45

9  
2

45

Ser Arg Arg Pro Leu Ser Leu Leu Tyr Tyr Asp Arg Asp Ser Asn Ile  
 325 330 335  
 Val Lys Thr Asp Ile Pro Asp Met Val Val Glu Ala Cys Gly Cys Ser  
 340 345 350

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: US 08/289,222
- (I) FILING DATE: 12-AUG-1994

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

CAGGTAGGTC CATGGTCG

18

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 21
- (D) OTHER INFORMATION: /note= "XAA IS T OR C"

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 27
- (D) OTHER INFORMATION: /note= "XAA IS A OR G"

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 33
- (D) OTHER INFORMATION: /note= "XAA IS A, C, T OR G"



(x) PUBLICATION INFORMATION:  
(H) DOCUMENT NUMBER: US 08/289,222  
(I) FILING DATE: 12-AUG-1994

(H) DOCUMENT NUMBER: US 08/289,222

(I) FILING DATE: 12-AUG-1994

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

CTTGATTTT AACAGACC

18

[illegible]